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Lehigh University

Monuments

[Bethlehem, Pa.]

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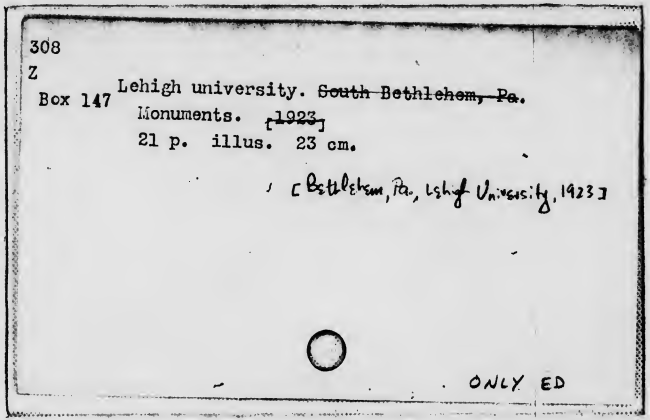

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MONUMENTS

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MONUMENTS

LEHIGH UNIVERSITY
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Monuments

IN A corner of St. Paul's Cathedral, in London, is the burial stone of a great architect: "Here lies Sir Christopher Wren. If you would see his monument, look about you."

Just as the best measure of a man is the monument of some lasting benefit which he has conferred upon his fellow beings, so is the best measure of a university the collective achievements of its alumni.

If a university sends forth men conscious that their added knowledge is a trust to be administered for the benefit of others, and if those men give evidence that they are administering that trust wisely and beneficially, then that university is fulfilling its obligations to society.

Lehigh University has impressed upon its sons the consciousness of that trust.

In the heart of Eastern industry, Lehigh holds before its students a panorama of stupendous industrial activity. Wherever he looks, the student sees the belching smoke of the steel plants, the mines which provide motive power for the wheels of industry, the workshops of countless manufacturing enterprises. As he works over an experiment in the laboratory or listens to a classroom lecture, he sees these things not as unrelated fragments of a routine task, but as stepping stones to the world just outside where the opportunity awaits him, as chemist, engineer or scientist, to apply his training to the advancement of the nation's welfare and prosperity.

Despite every obstacle and the severe overtaxing of its physical facilities, Lehigh University has for fifty-seven years been endowing the nation with men of this stamp.

Lehigh is more than a group of buildings and a faculty; it is a far-flung body of effective alumni. Lehigh is more than an engineering school; it is the sum of the monuments erected by its alumni—the ingenuity and energy which built the Grand Central Terminal and the locks of the Panama Canal, the patient research behind discoveries which benefit mankind for all time to come.

Lehigh is proud to be judged by the monuments built by Lehigh men.

FOUNDED before the first successful demonstration of the telephone and growing coincidently with the common fund of electrical knowledge, it is only natural that Lehigh University should have graduates in the research laboratories alike of universities and great electrical concerns. One of the founders of the great Westinghouse Company was H. M. Byllesby, '78, who served as Vice-President and General Manager from 1885 to 1891, and afterwards founded the H. M. Byllesby Company. The class of 1895 alone has contributed the Contracts Manager of the Metropolitan-Vickers Electric Company, Manchester, England; the General Superintendent of the Electric Storage Battery Company; the Vice-President of the Westinghouse Commercial Investment Company; Sales Manager, Power and Mining Department, Siemens Brothers, London; and the Chairman of the Government's Super-Power Survey Commission.

Other classes are represented by the President of the Packard Electric Company; Vice-President of the Canadian Westinghouse Company; the presidents of the American Power and Light Company; Toledo Edison Company; San Diego Consolidated Gas and Electric Company; Manager of the Benjamin Electric Manufacturing Company; and, in addition, by a group of distinguished consultants which includes H. F. Parshall, '87, the foremost consulting electrical engineer of England; L. B. Stillwell, '85, one of the foremost consulting engineers in America; and E. A. Grissinger, '94, the inventor of the telephone repeater or relay.

WHEN the householder lays in his winter's supply of anthracite there is about an even chance that it is produced by a company headed by a Lehigh graduate. Of the 80,000,000 tons of anthracite coal mined annually, 35,000,000 tons are the product of companies directed by Lehigh men.

With the great anthracite fields at its very gates, it is only natural for the Lehigh graduate to find there an opportunity to apply his technical training and skill; certainly there is ample precedent, for Asa Packer, the founder of Lehigh, was a pioneer in the development of the anthracite industry, as were also Eckley B. Coxe and John Fritz, Trustees of the University.

The first graduate of Lehigh to achieve prominence as an anthracite coal operator was W. A. Lathrop, '75, to whose administrative genius the Lehigh Valley Coal Company and the Lehigh Coal & Navigation Company are fitting memorials. J. M. Humphrey, '89, now heads the Lehigh Valley Coal Company. The present head of the other company is S. D. Warriner, '90, spokesman for the anthracite mine operators and recognized as the leading anthracite mining engineer in the country. A. B. Jessup, '95, is another of the four members of the anthracite operators committee.

Among the other companies in which Lehigh graduates occupy high positions and which contribute to the Lehigh quota of 44 per cent of the nation's total output are the Lehigh & Wilkes-Barre Coal Company, Thorne Neale & Company, Weston, Dodson & Company, the Hudson Coal Company, Pennsylvania Coal Company, and G. B. Markle & Company, the owners of the famous Jeddo Coal Field.

Lehigh leadership is by no means restricted to the anthracite field. In the mining of bituminous coal the technical and executive skill of its graduates is found in such companies as Peale, Peacock & Kerr, Berwind-White Coal Mining Company, Empire Coal Mining Company, Pilling & Company, and the Clearfield Bituminous Coal Corporation, the New York Central Railroad coal interests, as well as many companies in West Virginia and Alabama.

The General Manager of the coal properties of the American Smelting & Refining Company is a graduate of the Class of '96. The President of the Cambria Fuel Company of Wyoming and of the Pacific Coast Coal Mines of British Columbia and the Consolidated Fuel Company of Oklahoma are all Lehigh men.

Throughout the coal industry, as mining engineers, superintendents, electrical engineers, chemists, mechanical engineers and sales executives, are scores of the younger Lehigh men, who are now preparing themselves to step eventually into the shoes of the older men, and thus maintain the leadership of Lehigh in this vital industry, where proper training is so essential.

RANKING equally with coal in importance as a basic industry is iron and steel. The ingot capacity of the United States is approximately 50,000,000 tons. Lehigh men are prominent in the management of companies whose aggregate capacity is two-thirds of that tonnage. The production of these companies alone is more than twice that of the entire steel industry of Great Britain.

The largest factor is the United States Steel Corporation, the cornerstone of which is the Carnegie Steel Company. An early Lehigh graduate, Charles L. Taylor, '76, was until his death a partner of Carnegie and one of his most trusted lieutenants. Another dominant figure in the early chapters of steel history was Frank Williams, '87. At the present time a Vice-President of the United States Steel Corporation, the President of the Carnegie Steel Company, and the Vice-President in Charge of Operations and the General Manager of the National Tube Company, another important subsidiary, represent Lehigh in the higher executive positions of the United States Steel Corporation.

In the second largest unit in the steel business, the Bethlehem Steel Corporation, is found the most preeminent and continuous influence of Lehigh. This company was originally under the direction of John Fritz, a

Lehigh Trustee, who built the great ordnance plant at Bethlehem. Later another Trustee, Charles M. Schwab, assumed control. Two successive presidents, E. M. McIlvain and Archibald Johnston, both Lehigh men, contributed materially to the company's expansion. Today the corporation is under the guidance of Eugene G. Grace, '99, while scores of other Lehigh men occupy prominent positions, including two vice-presidents and the heads of the Sparrows Point, Steelton, Lackawanna, and Saucon plants.

The roll of Lehigh-directed steel companies includes also the Republic Iron and Steel Company, whose President, Vice-President and General Sales Manager are Lehigh men; Pittsburgh Crucible Steel Company, subsidiary of the Crucible Steel Company of America, which was organized largely through the efforts of a Lehigh graduate; Donner Steel Company, Braeburn Steel Company, Vanadium Alloys Steel Company, Woodward Iron Company, Edgewater Steel Company, Cleveland-Cliffs Iron Company, Marquette Iron Company and the Jones & Laughlin Company. And the influence of Lehigh has extended to England, also, where one of its graduates is manager of the Dowlais Cardiff Steel Works.

In justice to the many other steel companies and to the hundreds of other Lehigh men who are contributing to the advancement of the steel industry, it must be stated that this brief space permits of only the most sketchy and fragmentary account of the dominant part that Lehigh graduates are playing in this field. Their number and accomplishments are legion.

THREE great monuments testify to the engineering and construction skill of Lehigh graduates.

Two of them are in New York City. One is the Singer Building, at its completion the tallest building in New York and still, after fifteen years, surpassed by only two other buildings. The second is the Grand Central Terminal, an engineering triumph never exceeded in that it was constructed without interfering with the schedule of a single one of the 421 trains leaving and entering daily over the New York Central Railroad.

The third monument is found on the Canal Zone—the mighty locks of the Panama Canal. When the plans for a sea-level canal were abandoned, there arose the problem of providing locks which could accommodate the largest steamships which the future might produce. The result was three systems of locks, each individual unit of which was 110 feet in width by 1000 feet in length. The three locks at Gatun lift the hugest liners 85 feet from the level of the Atlantic to that of Gatun Lake; beyond Culebra Cut the Pedro Miguel and Miraflores locks lower the vessels gently to the level of the Pacific.

In the fabrication and erection of steel, the McClintic-Marshall Construction Company, the builders of the Panama Canal locks, is the second largest in the country

and is headed by two Lehigh graduates. The presidents of the Fort Pitt Bridge Works, the Dravo Contracting Company, and the Bethlehem Fabricators, Inc., are Lehigh men, as are the vice-presidents of Levering & Garrigues and the Shoemaker Bridge Company. Lehigh men are to be found in other high positions both in these and many of the other fabricating companies.

Closely allied to the fabrication of steel are the construction companies. The Chief Engineer of Post and McCord, Inc., which built the Metropolitan Tower, the second tallest office building in New York, and which specializes in the design and erection of mammoth steel structures, is a Lehigh graduate. J. G. White, of the Class of '87, is president of the engineering corporation bearing his name. The builder of the Grand Central Terminal was Emil Diebitsch, '89. The Pittsburgh Construction Company has for its president a graduate of the Class of '94.

The Chief Engineer of the Board of Water Supply of the City of New York is Thaddeus Merriman, '98, and a leading figure in the cement industry was J. W. Eckert, '78. The National Slag Company is headed by a Lehigh man who substituted slag—a waste product—for stone in the making of concrete.

In every branch of engineering—the design of water works and sewage disposal plants, harbor improvements, the construction of railroads—are found the names of men who received their training at Lehigh University. A great structure right at home—the Hill-to-Hill Bridge—built by C. W. Hudson, '89.

WHEREVER farming is carried on "John Deere" is a by-word. Wagons, plows, and agricultural implements of all descriptions bearing this name are found in the farthest quarters of the globe. Some type of machine built by the Bucyrus Company or the Erie Steam Shovel Company is usually represented in every big dredging or contracting operation. Throughout the country, there will be found on the dealers' shelves the soap products of J. Eavenson & Son and the coconut products of the Franklin Baker Company. The president of each of these companies is a graduate of Lehigh University.

The field of manufacturing is manifestly so varied and so extensive that no enumeration of the companies in which Lehigh men are prominent could pretend to be anything but incomplete. It is possible only to select here and there a single name which must represent a score of others whose inclusion is unfortunately prevented by the lack of space.

Among the companies headed by graduates there are, for example, the Worthington Pump & Machinery Corporation, Koppers Company, Wilson-Snyder Manufacturing Company, American Abrasive Metals Company, Riegel Sack Company, Veeder Manufacturing Company, J. B. Semple Company, Ltd., Gear Grinding Ma-

chine Company, The Union Mills Paper Manufacturing Company, Newport Chemical Works, Inc., and Standard Plate Glass Company. The designer who gave his name to the Packard motor car and the President of the Packard Motor Car Company are both Lehigh men. The Mercer and Stutz motor cars owe much to former Lehigh management.

Of the companies in which Lehigh-trained men hold high executive positions there should be added The American Car & Foundry Company, Baldwin Locomotive Works, Robbins Conveying Belt Company, Bethlehem Foundry & Machine Company, Fleck Brothers Company, Acme Wire Company, Roller-Smith Company, H. K. Porter Company, Jarecki Manufacturing Company, Niagara Wall Paper Company, Inc., H. C. S. Motor Company, J. A. Roebling Sons Company, Railway Steel Spring Company, and the Standard Underground Cable Company.

Public utility companies such as the American Gas Company, Bridgeport Water Works Company, Milwaukee Gas Light Company, Philadelphia & Wilmington Traction Company, and United Gas Improvement Company benefit from Lehigh management.

In other sections of this pamphlet, such as those dealing with electricity and engineering and construction, there are mentioned companies which also engage in manufacturing but which, to prevent duplication have not been given here. Incomplete as this list is, it at least serves the purpose of indicating Lehigh's extensive influence in the field of manufacturing.

IN CUBA a Lehigh graduate is Assistant Vice-President of the Cuba Railroad Company. On the farther side of the Pacific, a graduate of the Class of '01 is Chief Technical Expert for the Chinese Ministry of Communications, having under its direction thousands of miles of railways.

In this country the President of the Missouri Pacific Railroad, the General Manager of the Lehigh and New England, and the Assistant to the President of the Long Island Railroad are all Lehigh men. In numbers alone, Lehigh is probably best represented in the great Pennsylvania System. The roster of graduates includes the Superintendent of the important Pittsburgh Division, the Engineer of Bridges and Buildings, Pennsylvania Railroad; Engineer of Bridges and Buildings, Pennsylvania Lines West; General Storekeeper; Assistant General Manager, Eastern Region; General Superintendent, Central Division; and the Superintendent of the Renova Divisions.

Lehigh graduates are also found as Chief Fire Protection Engineer, New York Central Railroad; Consulting Engineer, Seaboard Air Line; Superintendent, Northern Pacific Railway; and member of the Railroad Commission of Wisconsin. There are also many younger graduates already climbing the ladder.

AT THE very peak of the Washington Monument is a cap of aluminum weighing 100 ounces. It forms the tip of the lightning-rod which protects the monument from the bolts of lightning which its immense height attracts. When this cap was put in place the process of separating aluminum from the substances with which it was found was so costly that its use for commercial purposes was prohibited.

Today there is scarcely a kitchen that does not boast its array of aluminum ware. The substitution of aluminum for heavier metals has been a tremendous factor in the development of the aeroplane. The man who made possible the application of aluminum to commercial uses and who is known as "the father of the aluminum industry" was J. W. Richards, '86. While still a young man he was the recognized authority on aluminum and he was until his death in 1921 Consulting Engineer for the Aluminum Company of America.

In large concerns engaged in the extraction of other non-ferrous metals Lehigh men are also to be found in high positions. The Director of Purchases for the American Smelting & Refining Company graduated with the Class of '91. The firm of White & Brother, Inc., smelters and copper refiners, is headed by two Lehigh men. And the Technical Director of the New Jersey Zinc Company, as well as two successive superintendents of their great Palmerton plant received their engineering training for this responsibility at Lehigh. W. S. Cartright, '72, superintended the building of this plant.

THE leadership of Lehigh graduates in the mining of coal and iron has already been indicated. Mention has also been made of those men identified with companies extracting the non-ferrous minerals. Besides these, scattered in the remote regions where the mineral resources of the world are being developed, are to be found still more men who received their training at Lehigh University.

In Arizona a member of the Class of '05 is Consulting Engineer for the Inspiration Consolidated Copper Company and its allied interests. He is also President of the Arizona Industrial Congress. In Kansas a Lehigh graduate is General Superintendent of the American Bauxite Company, producers of aluminum ore. The Vice-President in Charge of Mining for the Bethlehem Steel Corporation comes from the Class of '87 and the Vice-President and General Manager of the Cleveland-Cliffs Iron Company from the Class of '80. In Central and South America, Asia, Africa, and Australia the graduates of Lehigh's mining course have made their mark. Other alumni are playing important roles in the oil industry.

In addition to those graduates who are connected with the great mining interests, there are a score or more of Lehigh men who are serving the mining industry at large in a consulting capacity.

IN *The Outline of History* Wells says that the formation in 1662 of the Royal Society of London marked the first definite step from the secret and solitary investigation of the alchemist to the frank report and open discussion which is the life of the modern scientific method. How far the pursuit and application of science has advanced since that initial impulse is admirably illustrated by the diversity of scientific and technological activities in which Lehigh men are found today.

A graduate of the Class of '88 is the Chief Chemist of the Welsbach Company and also the leading authority on Rare Earths. The Class of '91 claims the inventor of the Bucher Process for the fixation of atmospheric nitrogen. The Chief Technologist of the American Cyanamid Company, the General Manager of the Union Carbide and Carbon Corporation and its subsidiaries, the President and Vice-President of the duPont Nitrate Company are graduates of Lehigh. A graduate of the Class of '79 is a noted astronomer at Lick Observatory.

In the various Government services Lehigh is represented in the United States Geological Survey by its Iron Expert and its Vanadium and Manganese Expert and in the Division of Metallurgy of the United States Bureau of Mines, another graduate organized the Division of Mineral Technology at the National Museum in Washington. Another is Chief of the Division of Geodesy of the United States Coast and Geodetic Survey. M.L. Cooke, '95, has just been appointed Chief of Pennsylvania's Superpower Survey.

EVEN the most casual survey of the colleges of the country reveals the same leadership of Lehigh men in disseminating technical knowledge which characterizes their application of it in the world of industry and science. Lehigh is represented by graduates holding professorial rank or higher on the faculties of twenty-four colleges or universities.

Their number includes the Presidents of the North Carolina Agricultural and Engineering College, the Lowell Textile School, and of Fiske University; the Deans of Moravian College, Swarthmore College, the College of Engineering, University of Cincinnati, the Head of the Department of Mining Engineering, West Virginia University, and professors at the University of Pennsylvania, University of Virginia, University of Utah, Cornell University, Lafayette College, Brooklyn Polytechnic Institute, Virginia Polytechnic Institute, University of Missouri, University of Havana, Rutgers College, Columbia University, and Lehigh University. The School of Mines, University of Illinois, was formed by H. H. Stoek, '87, an authority on coal mining and storage, whose untimely death occurred in 1923.

Lehigh is thus endowing the nation with men fitted by training to assist materially in the harnessing of Nature and to impart their knowledge to others.

THE fact that the United States Patent Office is so deluged with applications for patents that it has been as much as two years behind in their examination illustrates graphically the stupendous number of mechanical inventions and improvements which this industrial age is calling forth.

Possessing the technical knowledge required to pass intelligently upon mechanical devices and processes and to secure for the inventor his just share of protection to repay his patient study and labor, it is inevitable that a large number of Lehigh graduates should have chosen the profession of patent law. That they are successfully meeting the exacting requirements of their profession is evidenced by the fact that while many are engaged in general patent law, others are serving such great manufacturing companies as the United States Steel Corporation and the General Electric Company whose patents are worth millions.

It should not be gathered, however, that the activity of Lehigh men is confined to that particular branch of the law. Others have achieved prominence as corporation counsel and on the bench; G. W. Wickersham, '77, former Attorney General of the United States; H. S. Drinker, '71, President Emeritus of Lehigh and former Counsel for the Lehigh Valley Railroad Company; the Chairman of the Public Service Commission of Pennsylvania; a Judge of the Ohio Court of Common Pleas, United States Commissioner for the District of Maryland, and Associate Justice of the Supreme Court of the District of Columbia.

ONE of Lehigh's greatest contributions is the tremendous volume of scientific and technical writings produced by its alumni. These comprise basic text-books in wide use by technical schools, books of reference, treatises, monographs, and articles contributed to scientific and technical journals. They are so numerous and cover so wide a range of subjects that to enumerate any particular works would be unfair to the hundreds of others which, simply for lack of space, would have to be omitted.

Lehigh men have achieved distinction in other than the technical field of literature. A graduate of the Class of '86, Richard Harding Davis, is known wherever the English language is spoken or read. M. A. DeWolfe Howe, Jr., '86, is Editor of the Atlantic Monthly Press. Three other Lehigh graduates, R. G. Kirk, '05; Edwin Lefevre, '91; and Floyd W. Parsons, '02, need no introduction to readers of *The Saturday Evening Post.*

In the newspaper and publishing world Lehigh is also well represented. The Political Editor of the Cleveland *News-Leader*, the Advertising Director of the Hartford *Courant*, the Vice-President of the Reading Eagle Company,the President of the National Railway Publication Company, the publisher of the Newark *Evening News*, and the Editor of the *Gas Age Record* are all graduates of Lehigh University. Thus in the court of public opinion Lehigh graduates are playing a responsible part. Younger graduates are to be found on such papers as the New York *Tribune*, the Philadelphia *Public Ledger*, and the Boston *Traveler*.

THESE are the monuments by which Lehigh may be judged.

In the achievements of its alumni Lehigh has ample proof that it has administered its resources in capital and teachers for the common good.

Lehigh has the location, in the heart of Eastern industry, which inspires its students with the limitless opportunities beckoning to the technically trained man.

Lehigh is planning not merely for today, nor for tomorrow, but for the future. In the far-seeing plan of its President, Dr. Charles Russ Richards, Lehigh is preparing now for the demands which, ten years from now, will inevitably be placed upon it.

For these three reasons, the proven accomplishments of its men, its ideal industrial location, and the inspiring plan of its President, Lehigh University will look with confidence for generous support in its plea for additional plant and an adequate endowment.

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